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REMARKS

In response to the Office Action mailed December 24, 2002, Applicant respectfully requests reconsideration. To further the prosecution of this application, Applicant has amended claims and added claims, and submits the following remarks. Claims 1-29 currently are pending in this application, of which claims 1, 9, and 19 are independent claims. In this amendment, claims 1-10, 13, 14, 17, and 18 have been amended and claims 19-29 have been added. The application as presented is believed to be in allowable condition.

A. Double Patenting Rejection

On page 2 of the Office Action, claims 1-18 were rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being obvious over claims 1-19 of U.S. Patent No. 6,274,869. While not acceding to the propriety of this rejection, Applicant encloses a terminal disclaimer and the appropriate fee for the terminal disclaimer to overcome these rejections.

B. Rejections Under 35 U.S.C. §102

On page 3 of the Office Action, claims 1-5, 7, 9-13, 17, and 18 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Hegel, et al. (U.S. Patent No. 4,752,694). Applicant respectfully traverses these rejections.

Claim 1, as amended, is directed to an apparatus comprising at least a first sensor to detect radiation and to output a first image signal based on the radiation detected by the first sensor. The apparatus also comprises offset correction circuitry to compensate errors in at least the first image signal and to output at least a corrected first image signal. The offset correction circuitry includes means for providing at least one time-varying compensation signal that is added to the first image signal to generate the corrected first image signal.

Claim 1 has been amended not to overcome any prior art of record, including the Hegel patent, but rather to clarify some of the patentably distinguishing features of claim 1 that were previously recited in the claim. For example, prior to the amendments herein, claim 1 recited that the offset correction circuitry includes means for providing a time-varying compensation signal. This feature is absent from Hegel as well as the other references of record, as discussed in further detail below. Claim 1 has been amended merely to clarify that the time-varying compensation signal is added to a first image signal output by

a first sensor in response to detected radiation, so as to compensate errors in the first image signal and output a corrected first image signal.

Hegel does not disclose or suggest the apparatus of Applicant's claim 1. Rather, Hegel merely discloses a device in which a constant bias signal, rather than a time-varying signal, is applied to respective sensors of a sensor array to correct for non-uniformity in the array.

Specifically, Hegel is directed to an electronic array uniformity correction apparatus for use with a bolometer array (Abstract). As shown in Fig. 1 of Hegel, a bolometer array 10 includes a number of resistive sensors, wherein each sensor is connected to a blocking diode (col. 1, lines 66-67). Hegel discloses that a two-dimensional bolometer array generally is made up of a number of resistive thermal detectors whose electrical resistance changes as a function of temperature (col. 1, lines 27-31).

To provide an output signal, each sensor of Hegel's bolometer array 10 is sequentially connected between a voltage supply at the point A and a readout circuit 51 at the point B. The sensors of the array are connected between the points A and B via a number of FETs 14, 15, 16, 44, 45, and 46, by closing selected contacts of switches 60 and 61 (col. 2, lines 1-3).

In the embodiment of Hegel's Fig. 1, a single array uniformity correction circuit, including a memory 70, a digital-to-analog converter 71, and a sample and hold circuit 72 is connected to the switch 60 to provide offset signals to the sensors of the bolometer array 10, so as to compensate for non-uniformities in the sensors (col. 2, lines 54-58; col. 1, lines 1-4). In particular, an output 73 of the sample and hold circuit 72 provides offset signals to the respective gates of FETs 14, 15, and 16 to selectively control the on-resistance of the FETs. In this manner, a prescribed portion of the voltage supply at the point A is provided as a constant bias signal to corresponding sensors of the array as they are switched to the point A (col. 2, lines 54-68; col. 3 lines 1-4; Fig. 3).

Hegel discloses that by providing a constant bias offset signal directly to each sensor of the bolometer array 10 (i.e., before the preamplifier and readout circuit 51), the array uniformity connection circuit of Fig. 1 facilitates the use of a preamplifier that does not have to accommodate a large dynamic range for input signals to the preamplifier (col. 3, lines 55-64; col. 4, lines 11-14 and lines 35-37, and lines 58-60). Alternatively, in Figs. 4 and 5 respectively, Hegel discloses two other embodiments of an array uniformity correction circuit which each provides offset correction at the output of a preamplifier 51' (which amplifies

sensor output signals at the point B). In any case, with respect to the embodiments disclosed in each of Figs. 1, 4, and 5, it is noteworthy that nowhere in the reference does Hegel disclose or suggest that any signals generated and applied to provide offset correction to respective sensors of the array 10 are time-varying signals; specifically the teachings of Hegel are limited only to *constant non-time-varying bias signals* that are applied either directly to the sensors themselves (Fig. 1) or at the output of a preamplifier that amplifies signals generated by the sensors (Figs. 4 and 5).

In contrast to Hegel, Applicant's claim 1, as discussed above, includes means for providing at least one time-varying compensation signal that is added to a first image signal output by a first sensor so as to generate a corrected first image signal. The Office Action states on page 4 that Hegel allegedly discloses such a feature in column 4, lines 10-37. Applicant respectfully disagrees. This passage of Hegel cited by the Office Action merely discloses that bias signals which are generated for non-uniformity correction are derived by retrieving from memory a single digital value for each sensor that is converted to an analog signal via a digital-to-analog converter and applied either directly to a given sensor via an FET, or to sensor output circuitry (a preamplifier). In one specific embodiment as shown in Hegel's Fig. 5, the digital-to-analog converter is provided by a bank of switched resistors. In any case, it is noteworthy that the cited passage of Hegel states only that a different number representing a constant bias value for each sensor in the array is stored in a corresponding memory location and recalled from memory when the sensor is activated (col. 3. lines 2-5).

In view of the foregoing, Hegel fails to disclose or suggest any means for providing a time-varying compensation signal that is added to a first image signal to generate a corrected first image signal. For at least the foregoing reasons, claim 1 patentably distinguishes over Hegel and is condition for allowance. Therefore the rejection of claim 1 as allegedly being anticipated by Hegel should be withdrawn.

Claims 2-8 depend from claim 1 and are allowable for at least the same reasons. Minor clarifying amendments to dependant claims 2-8 have been made so as to ensure consistency with claim 1. For the sake of brevity, the dependent claims are not discussed in detail herein, for it is believed to be unnecessary at this time to argue the allowability of each of the dependent claims individually. However, Applicant does not concur with the characterization of the dependent claims as set forth in the Office Action, nor does Applicant concur that the basis for the rejection of any of the dependent claims is proper. Therefore,

Applicant respectfully reserves the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

Claim 9, as amended, is directed to a method for compensating errors in at least a first image signal generated by a first sensor in response to radiation detected by the first sensor. The method comprises a step of adding a time-varying compensation signal to the first image signal. For reasons similar to those discussed above in connection with claim 1, claim 9 is believed to be in condition for allowance. Therefore, the rejection of claim 9 under 35 U.S.C. §102(b) as allegedly being anticipated by Hegel should be withdrawn.

Claims 10-18 depend from claim 9 and are allowable for at least the same reasons. As with claims 1-8 discussed above, claims 9-18 have been amended not to overcome any rejections over prior art but merely to clarify previously recited features that are believed to patentably distinguish over the references of record.

C. Newly Added Claims

Claims 19-29 have been added to more fully define Applicant's contribution to the art. New independent claim 19 is directed to an apparatus comprising at least a first sensor adapted to generate a first signal in response to radiation detected by the first sensor. The apparatus also comprises at least one signal generator configured to add a first time-varying compensation signal to the first image signal so as to provide an adjusted first image signal. These features are substantially similar to those recited in independent claims 1 and 9, and are therefore believed to be allowable for at least the same reasons discussed above in connection with these claims. New claims 20-29 depend from claim 19 and are believed to be allowable for at least the same reasons.

D. Conclusion

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a

fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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